

WHAT IS CLAIMED IS:

1. A network device, comprising:
  - a control point;
  - an infrastructure module resident on the control point constructed and arranged to
  - 5 allow the control point to connect and exchange information with other control points;
  - and
  - a communication library resident on the control point constructed and arranged to
  - provide information to the control point about control plane protocol modules on the
  - current control points.
- 10 2. The network device of claim 1, the network device further comprising a control plane protocol module.
3. The network device of claim 2, the control plane protocol module further comprises a worker control plane protocol module.
4. The network device of claim 2, the control plane protocol module further comprises a
- 15 controller control plane protocol module.
5. The network device of claim 1, the control point further comprises a control plane.
6. The network device of claim 1, the control point further comprises a forwarding plane.
7. The network device of claim 1, the infrastructure further comprising at least one standardized application programming interface.
- 20 8. The network device of claim 7, the application programming interface further comprising an application programming interface in accordance with the Network Processing Forum.
9. The network device of claim 1, the infrastructure module further comprising a namespace to allow registration of components of the infrastructure module.
10. The network device of claim 1, the infrastructure module further comprising a control
- 25 plane protocol module registration module and a packet redirection module.

11. The network device of claim 1, the infrastructure module further comprising a binding and discovery module and a transport module to allow the infrastructure module to communicate with other infrastructure modules on other network devices.

12. The network device of claim 1, the communication library further comprising a peer control plane protocol module application programming interface.

13. The network device of claim 1, the communication library further comprises a messaging layer.

14. The network device of claim 1, the communication library further comprising a transport abstraction layer to handle interconnection and transport protocols.

15. A system, comprising:

a control plane having a control plane processor;

at least one forwarding plane having a forwarding plane processor;

a backplane to provide connectivity between the control plane and the forwarding plane; and

an infrastructure module resident on the control plane and the forwarding plane constructed and arranged to manage the connectivity between the control plane and the forwarding plane.

16. The system of claim 15, the system further comprising a communication library resident on the control plane and the forwarding plane to communicate with the infrastructure module to obtain information about control plane protocol modules and to setup connections with the control plane protocol modules.

17. The system of claim 15, the control plane further comprising a controller control plane protocol module.

18. The system of claim 15, the forwarding plane further comprises a worker control plane protocol module.

19. A method of distributing processing in a network device, comprising:

defining controller and worker control plane protocol modules;  
developing corresponding entries in a communications library;  
implementing an infrastructure module, the communication library and the controller  
module on a control plane; and

5 implementing the infrastructure module, the communication library and the worker  
modules on a forwarding plane.

20. The method of claim 19, defining a controller and worker control plane protocol modules  
further comprising providing interfaces between the controller and worker modules.

21. The method of claim 19, developing corresponding entries in a communications library  
10 further comprising developing instructions that, when executed, cause the controller and  
worker control plane protocol modules to communicate.

22. An article of machine readable instructions that, when executed, cause the machine to:

define defining controller and worker control plane protocol modules;

develop corresponding entries in a communications library;

15 implement an infrastructure module, the communication library and the controller  
module on a control plane; and

implement the infrastructure module, the communication library and the worker  
modules on a forwarding plane.

23. The article of claim 22, the instructions that cause the machine to define a controller and  
20 worker control plane protocol modules further cause the machine to provide interfaces  
between the controller and worker modules.

24. The article of claim 22, the instructions that cause the machine to develop corresponding  
entries in a communications library further cause the machine to develop instructions that,  
when executed, cause the controller and worker control plane protocol modules to  
25 communicate.